

CLAIMS

What is claimed is:

5 1. A method of seamlessly transferring a communication session on an IP network, the method comprising:

initiating a communication session between a correspondent device and a first device using a session specific IP address as the first device IP address.

10 negotiating to transfer the communication session from the first device to a second device; and

transferring the first device IP address from the first device to the second device so that communication session data transferred from the correspondent device to the first device via the address thereof will be received by the second device.

15 2. A method according to claim 1, wherein the negotiating to transfer the session comprises:

creating a method for securely transferring the communication session from the first device to the second device.

20 3. A method according to claim 2, where the created method for securely transferring the communication session comprises:

generating a random number to serve as a session key for the secure transfer of the communication session between the first device and the second device.

25 4. A method according to claim 2, wherein the method further comprises:

encrypting the session key;

transferring the encrypted session key from one of said first device and second device to the other of said first device and second device; and

using the session key to securely transfer the communication session between the first device and the second device.

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5. A method according to claim 1, wherein the method further comprises:

generating a wake-up message once the communication session is no longer to be transferred causing the first device to resume receiving communication sessions addressed to its IP address.

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6. A method according to claim 1, wherein the first device and the second device are located on different subnets and the method further comprises:

notifying an Agent of the desire to transfer so that the Agent can intercept the sessions addressed to the first device IP address;

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intercepting the sessions addressed to the first device at the first device IP address via the Agent; and

tunneling the session from the first device to the second device once the first device IP address has been transferred to the second device.

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7. A method according to claim 6, wherein the method further comprises:

authenticating the notice from the first device to the Agent to ensure that the first device is the source of the notice.

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8. A method according to claim 6, wherein the method further comprises:

notifying the Agent whether the second device is authorized to transfer the

session.

9. A method of seamlessly transferring a communication session on an IP network, the method comprising:

5 requesting the initiation of a session between a correspondent device and a first device;

 generating an IP address specifically for initiating the session between the correspondent device and the first device;

10 initiating the session between the correspondent device and the first device using the session specific IP address;

 registering a desire to transfer the session from the first device to a second device; and

15 transferring the session specific IP address from the first device to the second device so that data transferred from the correspondent device to the first device via the address thereof will be received by the second device.

10. A method according to claim 9, wherein the method comprises:

 requesting the initiation of a session between the correspondent device and the first device via use of a permanent IP address associated with the first device; and

20 allowing the first device to participate in additional communication sessions after the transfer of the session from the first device to the second device has occurred via the first device's permanent IP address.

11. A method according to claim 9, wherein the method further comprises:

25 negotiating the transfer between the first device to the second device so that

each device is aware of the transfer and authorized to participate in the transfer.

12. A method according to claim 11, wherein the negotiation further comprises:

generating a random number to serve as a session key for the secure transfer of
5 the session between the first device and the second device so that the session can only be
transferred between authorized devices.

13. A method according to claim 11, wherein the negotiation further comprises:

identifying whether the second device can transfer the session on to another
10 device so that the second device cannot improperly transfer the session to another device
unless such permission has been previously given.

14. A method according to claim 9, wherein the method further comprises:

notifying the second device of any information that is needed to maintain use of
15 the session specific IP address so that the session specific IP address will continue to work
throughout the session transfer.

15. A method according to claim 9, wherein the first device and second device are on the
same subnet and the method further comprises:

20 intercepting the session addressed to the first device at the session specific IP
address via the second device.

16. A method according to claim 15, wherein the interception of the session comprises:

25 using a Proxy ARP message to bind a link-layer address associated with the
second device to the session specific IP address.

17. A method according to claim 9, wherein the first device and second device are on separate subnets and the method further comprises:

5 registering the session specific IP address with an Agent so that the Agent can intercept the session addressed to the session specific IP address and transfer the session from the first device to the second device;

intercepting the session addressed to the session specific IP address via the Agent; and

10 transferring the session addressed to the session specific IP address from the first device to the second device.

18. A method according to claim 17, wherein the transferring further comprises:

15 tunneling the session addressed to the session specific IP address to the second device so that the second device will receive the session originally addressed to the first device.

19. A method according to claim 9, wherein the method further comprises:

releasing the session specific IP address once the session has ended so that the address can be reused for future sessions.

20 20. A method for transferring a communication session in an IP network from a first node to a second node via use of an IP address without disrupting the communication session, the method comprising:

initiating a communication session request between a first node and a Correspondent Node using base IP addresses for the nodes;

25 generating a communication session specific IP address with which the

communication session will be associated;

initiating a communication session between the first node and the
Correspondent Node using the session specific IP address;

negotiating a transfer of the session specific IP address from the first node to a
5 second node such that the second node will generally assume communicating with the
Correspondent Node;

generating a Proxy ARP message to bind a link-layer address associated with
the second node's to the session specific IP address so that the second node can intercept the
communications pertaining to the session specific IP address; and

10 intercepting the communications addressed to the session specific IP address
via the second node such that the communication session with the Correspondent Node
continues without interruption.

21. A method of transferring a communication session between a Transferring Node and a
15 Correspondent Node from the Transferring Node to a Target Node without disrupting the
communication session, the method comprising:

initializing a communication session between a Correspondent Node and a
Transferring Node by having the Correspondent Node contact the Transferring Node via a
permanent IP address assigned to the Transferring Node;

20 obtaining a specific IP address for the initialized communication session;
mapping the session specific IP address to the Transferring Node's permanent
IP address;

notifying the Correspondent Node of the session specific IP address for the
initialized communication session;

25 communicating between the Correspondent Node and the Transferring Node

via the session specific IP address; and

transferring the session specific IP address from the Transferring Node to the Target Node when a session transfer is ready to occur.

22. The method of claim 21, wherein the transfer of the session further comprises:

negotiating the session transfer between the Transferring Node and the Target Node;

generating a random number to serve as a session key as a result of the negotiating;

encrypting the session key via a security association between the Transferring Node and an Agent; and

transmitting the encrypted session key between the Transferring Node and the Target Node;

notifying the Agent that the communication session is being transferred from the Transferring Node to the Target Node;

authenticating the transfer notification by having the Agent verify that the Transferring Node sent the transfer notification;

intercepting the session communications intended for the Transferring Node via the Agent; and

tunneling the session communications intended for the Transferring Node to the Target Node via the Agent.

23. The method of claim 21, wherein the method further comprises:

allowing the Transferring Node to participate in another communication session while the transferring a first session to a Target Node.

24. An system for seamlessly transferring a communication session between different devices on an IP network occurring between a remote information source and one of the devices, the system comprising:

5 a first device having a first IP address that is used to directed packets intended for receipt by the first device from the remote source over the network to the first device;

a second device having a second IP address that is used to directed packets intended for receipt by the second device from the remote source over the network to the second device;

10 a switch associated with the devices operable to enable the second device to receive at least certain ones of the packets intended for the first device from the remote information source for seamless session transfer between the device;

an Agent for intercepting the sessions of communication directed to the first device at the first IP address and transferring these sessions to the second device;

15 an IP address generator for generating a session specific IP address which the remote information source and the first device use to conduct the session of communication; and

a session specific IP address generated by the IP address generator.

20 25. A system for seamlessly transferring a communication session on an IP network, the system comprising:

a Correspondent Node for transmitting and receiving packets of data within a session of communication;

25 a Transferring Node having a Transferring Node IP address and a session specific IP address and which is capable of participating in the session of communication with the Correspondent Node;

a Target Node capable of participating in the session of communication with the Correspondent Node; and

an IP network capable of transferring the session of communication between the Correspondent Node and the Transferring Node from the Transferring Node to the Target Node by transferring the session specific IP address from the Transferring Node to the Target Node thereby allowing the Transferring Node to continue to participate in sessions of communication via its Transferring Node IP address.

26. A system according to claim 25, wherein the system further comprises:

an Agent for intercepting the sessions of communication directed to the session specific IP address and transferring these sessions to the Target Node located on a foreign subnet.

27. A method for transferring a communication session in an IP network from a first node to a second node via use of an IP address without disrupting the communication session, the method comprising:

initiating a communication session request between a first node and a Correspondent Node using base IP addresses for the nodes;

generating a communication session specific IP address with which the communication session will be associated;

initiating a communication session between the first node and the Correspondent Node using the session specific IP address;

negotiating a transfer of the session specific IP address from the first node to a second node such that the second node will generally assume communicating with the Correspondent Node;

notifying an Agent about the transfer so that the Agent can intercept communications addressed to the session specific IP address and forward the communications to the second node; and

intercepting and forwarding the communications addressed to the session
5 specific IP address to the second node such that the communication session with the Correspondent Node continues without interruption.